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| 10/733,695 | 12/11/2003 | Joseph Kuczynski | ROC920030280US1 | 8669 |

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IBM CORPORATION, INTELLECTUAL PROPERTY LAW
DEPT 917, BLDG. 006-1
3605 HIGHWAY 52 NORTH
ROCHESTER, MN 55901-7829

EXAMINER

SCHATZ, CHRISTOPHER

| ART UNIT | PAPER NUMBER |
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1733

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,695

Applicant(s)

KUCZYNSKI, JOSEPH

Examiner

Christopher T. Schatz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) 9-12, 17-19 and 29-31 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8, 13-16 and 20-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/11/03.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, Claims 1-16 and 20-28, and Species A and A1 in the reply filed on June 19, 2006 is acknowledged. Applicant's arguments have been considered but they are not found persuasive. With respect to Groups I and II, examiner asserts that claim requires a method wherein the formulation is cured with both radiation *and* heat. The product of claim 17 can be used in a process wherein only radiation is used to partially cure the formulation.

As to Groups I and III, examiner acknowledges that claim 1 does not require a cationically curable composition. However, applicant should note that claim 1 also does not require an electronic device, and the method recited in claims 1-16 could be used to make another and materially different product such as a cured resin on a non-electronic substrate.

As to Groups II and III, applicant should note that the MPEP does not necessarily provide an example for every instance in which restriction is appropriate. Examiner maintains that the inventions are independent for the reasons presented on page 3 of the Restriction requirement.

As to the species restriction, Applicant should note that the restriction is between photoacid generators and photobase generators. The specification and the claims limit applicant to either photoacid generators or photobase generators because the methods are drawn to two mutually exclusive embodiments. Applicant elects Species A and Species A1 and states that the elected species read on claims 1-6, 8, 10, and 13-31. Examiner

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respectfully disagrees. The elected Group and Species read on claims 1-8, 13-16, and 20-28. Claims 10-13 are not drawn to the elected Species because said claims are drawn to photobase initiators.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 6 and 26 contain a Trademark name. Applicant is notified of the USPTO policy on the use of Trademarks in the claims: "If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph. *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product." MPEP 2173.05(u). Applicant has not identified Nacure XC-7231 in the specification, except to say that it yields a hexafluoroantimonate ion. Thus, the term Nacure XC-7231 is unclear to examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 7, 8, and 13-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hayashi et al. (WO99/20674*).

*For the purposes of this office action, applicant is referred to the English translation of the above cited document, US Patent No. 6,599,954.

Hayashi et al. discloses a method of curing a formulation, comprising: adding a thermal initiator and a photoinitiator to a curable composition to make a formulation; treating the formulation with sufficient radiation having a wavelength between about 220 nm and about 600 nm to generate a first active curing agent from the photoinitiator; and heating the formulation at a temperature sufficient to generate a second active curing agent from the thermal initiator, wherein the first active curing agent and the second active curing agent are both acids or both bases (column 6-8, column 11, lines 22-59). As to the wavelength, applicant is referred to item 8 of Table B, where the reference discloses a wavelength of 238.

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In any event, the wavelength used is a function of the desired bond strength and desired radiation time, and one of ordinary skill in the art would have selected wavelength between 220 nm and 600 nm through routine experimentation. At the time of the invention it would have been obvious to a person of ordinary skill in the art to treat the formulation with a wavelength between 220 nm and 600 nm as is known in the art.

Applicant should also note that it is well known to one of ordinary skill in that art that the photoinitiators (formulas I-VII) and thermal initiators (formulas VIII and IX) disclosed by the reference generate hexafluoroantimonic acid and thus one of ordinary skill in the art would have readily recognized that the both curing agents formed would be identical acids. At the time of the invention it would have been obvious to a person of ordinary skill in the art that the disclosed initiators would form hexafluoroantimonic acid as discussed above.

As to claims 2 and 3 Hayashi et al. discloses a method wherein the heating the formulation cures a part of the formulation that is shielded from the radiation (column 12, lines 36 – column 13, line 35). As to claims 7 and 8, Hayashi et al. discloses a method wherein the photoinitiator is selected from a diazonium salt (column 11, lines 30-33). As to claims 13 and 14, Hayashi et al. discloses a method wherein the curable composition is an epoxy acrylate composition. As to claims 15 and 16, Hayashi et al. discloses a method wherein the formulation is treated with radiation before and during the heating of the formulation (column 13, lines 25-57).

7. Claims 20-25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayer et al. '408. Bayer et al. discloses a method of forming a connection between an electronic device and an underlying substrate, comprising: placing

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a formulation between the electronic device and the underlying substrate, the formulation comprising a cationically curable composition, a photoinitiator, and a thermal initiator; treating the formulation with sufficient radiation to generate a first active curing agent; and heating the formulation at a temperature sufficient to generate a second active curing agent from the thermal initiator, wherein the first active curing agent and the second active curing agent are both acids or both bases (column 2, lines 1-65). The reference is silent as to the specific wavelength. Applicant should note that the wavelength used is a function of the desired bond strength and desired radiation time, and one of ordinary skill in the art would have selected wavelength a between 220 nm and 600 nm through routine experimentation. At the time of the invention it would have been obvious to a person of ordinary skill in the art to treat the formulation with a wavelength between 220 nm and 600 as is known in the art.

Applicant should also note that it is well known to one of ordinary skill in that art that the photoinitiator (column 4, lines 50-64) and thermal initiator (column 5, lines 1-15) disclosed by the reference generate hexafluoroantimonic acid and thus one of ordinary skill in the art would have readily recognized that the both curing agents formed would be acids. At the time of the invention it would have been obvious to a person of ordinary skill in the art that the discloses initiators would form hexafluoroantimonic acid as discussed above.

As to claims 2 and 3 Bayer et al. discloses a method wherein the heating of the formulation cures a part of the formulation that is shielded from the radiation. As to claim 25, Bayer et al. discloses a method wherein the resin is epoxy based. As to claims 27 and

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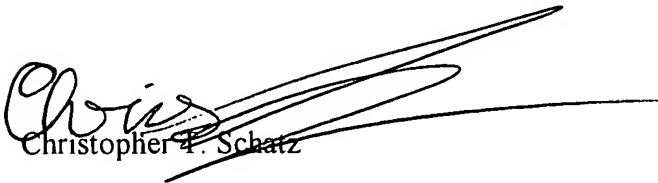
28, Bayer et al. discloses a method wherein discloses a method wherein the formulation is treated with radiation before and during the heating of the formulation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Christopher T. Schatz** whose telephone number is **571-272-1456**. The examiner can normally be reached on 8:00-5:30, Monday -Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher T. Schatz



RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700